

205.11 Natural Matrix Materials (powder form)

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PLEASE NOTE: The tables are presented to facilitate comparisons among a family of materials to help customers select the best SRM for their needs. For specific values and uncertainties, the certificate is the only official source.

SRM 4350B $\frac{3}{4}$ Columbia River Sediment

This material, provided in 85 g units, was collected from a river downstream from a nuclear reactor facility. Concentrations of fission and activation products are elevated over typical world-wide levels. Plutonium-239/ plutonium-240 and americum-241 are very homogeneously distributed through the sample and are in acid-leachable forms. Inhomogeneity is 3% or better for other radionuclides.

SRM 4351 $\frac{3}{4}$ Human Lung

This material, provided in 45 g units, contains radioactivity concentrations on the order of $10^{-4} \text{ Bq} \times \text{g}^{-1}$. It has been freeze-dried, cryogenically ground, homogenized, and packed in a glass bottle under vacuum. There is significant inhomogeneity in plutonium-239/plutonium-240 which is unavoidable because plutonium was taken into the lungs in particulate form. Assessments of accuracy of measurement techniques can be improved by averaging over several samples.

SRM 4352 $\frac{3}{4}$ Human Liver

This material, provided in 45g units, contains radioactivity concentrations on the order of $0^{-4} \text{ Bq} \times \text{g}^{-1}$. It has been freeze-dried, cryogenically ground, homogenized, and packed in a glass bottle under vacuum.

[SRM 4353 \$\frac{3}{4}\$ Rocky Flats Soil Number II SRM 4353a In Prep](#)

This material was collected at Rocky Flats, CO, but in a different location from its predecessor, SRM 4353. Trans-actinide concentrations are about an order of magnitude higher than typical world-wide levels and there is a potential that 10% of these nuclides could be in refractory form. It is also possible that ~15% of the uranium and thorium nuclides present are in non-acid leachable form. The SRM is intended for use in validation of radiochemical environmental studies methods.

SRM 4354 $\frac{3}{4}$ Freshwater Lake Sediment

This material (gyttja) contains approximately 25g of freeze-dried, pulverized freshwater lake sediment (approximately 50% organic by mass) in a polyethylene bottle. The SRM is intended for use in tests of measurements of environmental radioactivity contained in matrices similar to the sample, for evaluating analytical methods, or as a generally available calibrated "real" sample matrix in interlaboratory comparisons.

SRM 4355 $\frac{3}{4}$ Peruvian Soil

This material, provided in 75g units, has nonmeasurable radioactivity concentrations for many fallout radionuclides and can be used as a blank or for sensitive tests of radioanalytical procedures at low radioactivity concentrations for other radionuclides. The results of a trace element study are given for 57 elements.

SRM 4356 $\frac{3}{4}$ Ashed Bone

This material, provided in 15g units, is a partially ashed bone per sample aliquant of a 1:100 composite of human and bovine bones. The SRM is intended for use in validation of radiobiochemical methods for measurement of such radionuclides as strontium-90, radium-226, thorium-228, thorium-230, thorium-232, uranium-234, uranium-235, uranium-238, plutonium-238, plutonium-239/plutonium-240, and curium-243/curium-244. The thorium-232 and uranium-238 decay chains are **not** in equilibrium.

SRM 4357 ³/₄ Ocean Sediment

This material, provided in 80g units, consists of a blend of sediments collected in the Chesapeake Bay and in the sea off of the British Nuclear Fuels Sellafield facility in the United Kingdom. The SRM, which has been freeze-dried, pulverized, homogenized, and radiation-sterilized, is intended for use in tests of low level radiochemical methods for measurement of such fission products as strontium-90 and cesium-137 and actinides such as thorium-232, uranium-238, and plutonium-239/plutonium-240.

SRM 4358 ³/₄ Ocean Shellfish In Prep

This material, provided in » 300g units, was prepared from oysters from the southeastern Pacific Ocean blended with mussels from the White and Irish Seas. The SRM is intended for use in the validation of radiochemical ocean studies methods on material which is both a food product and a bioaccumulator of radionuclides associated with ocean nuclear waste dumping programs. The radionuclides determined include strontium-90, radium-226, thorium-228, thorium-230, thorium-232, uranium-234, uranium-235, uranium-238, plutonium-238, and plutonium-239/plutonium-240.